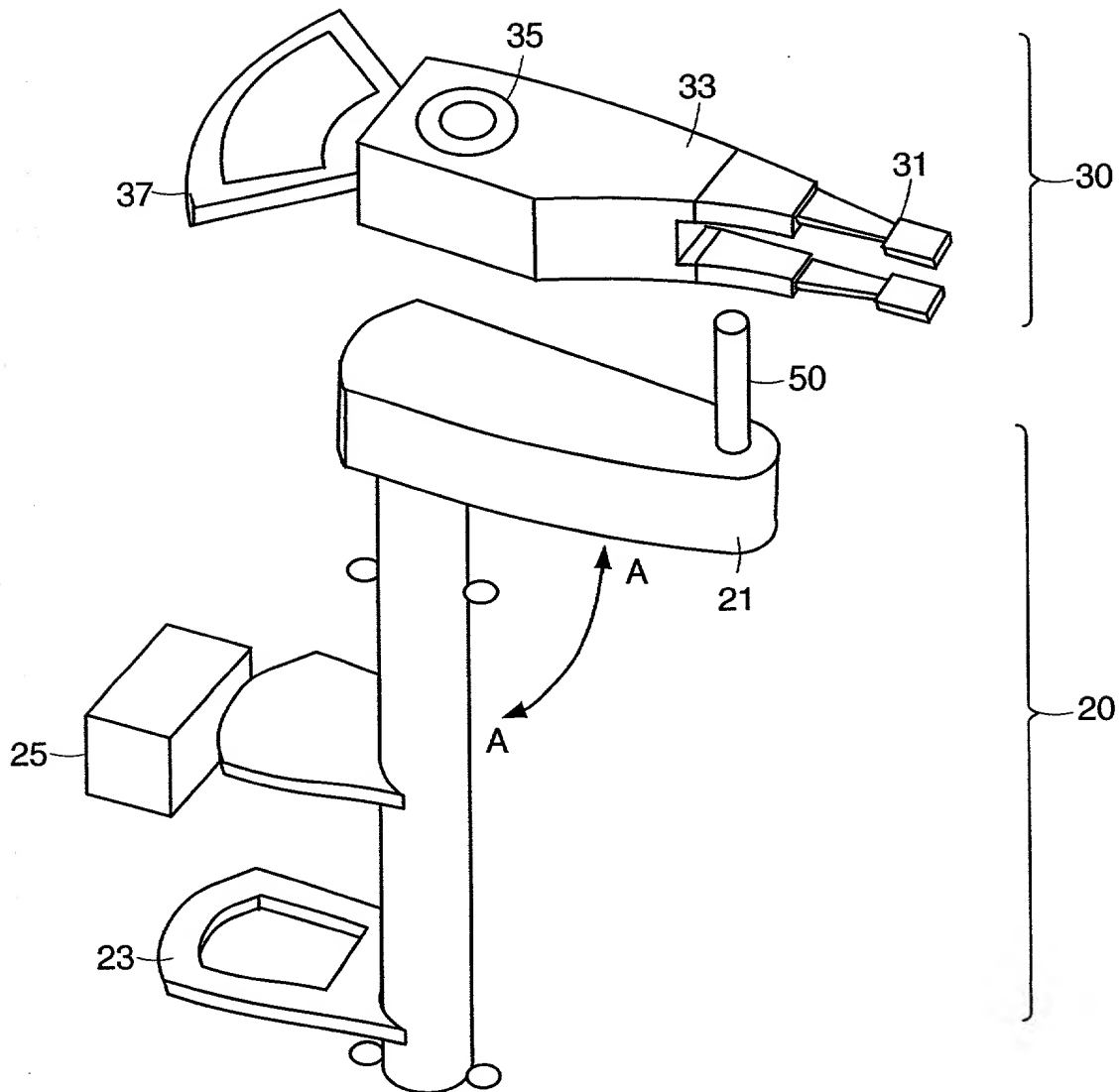
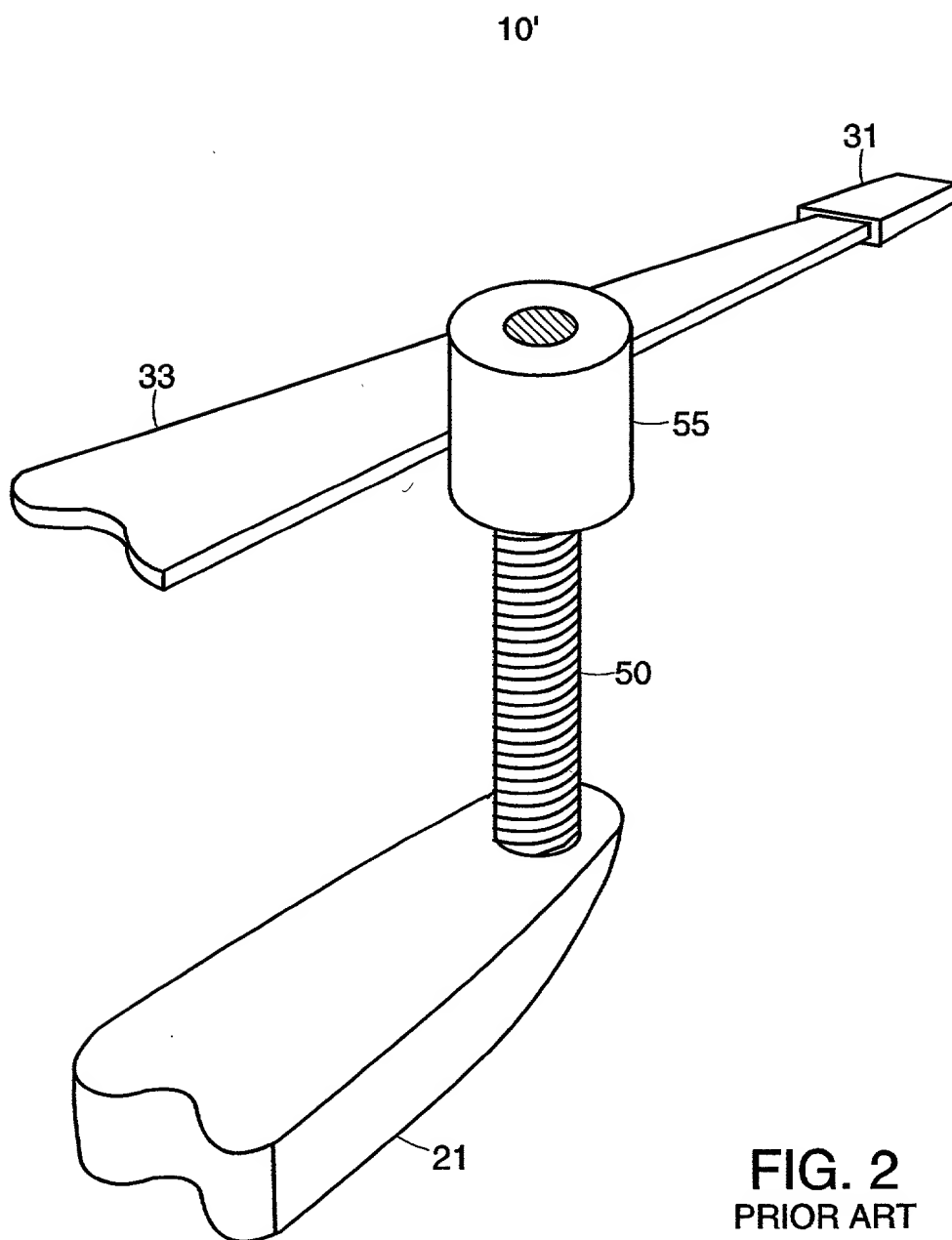
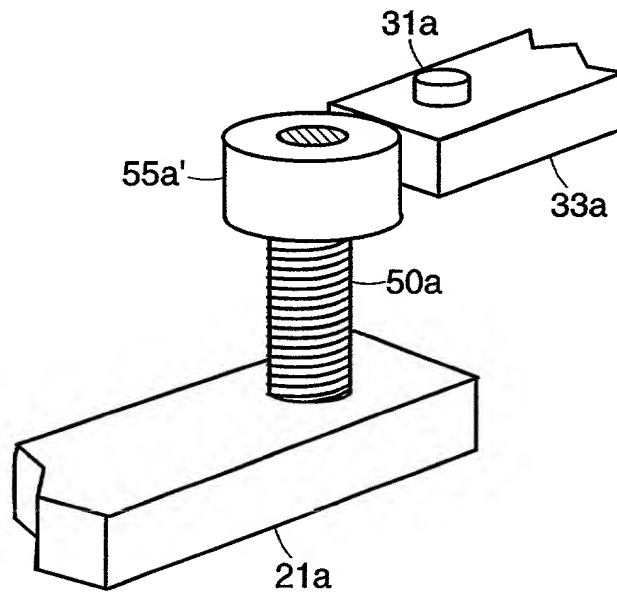
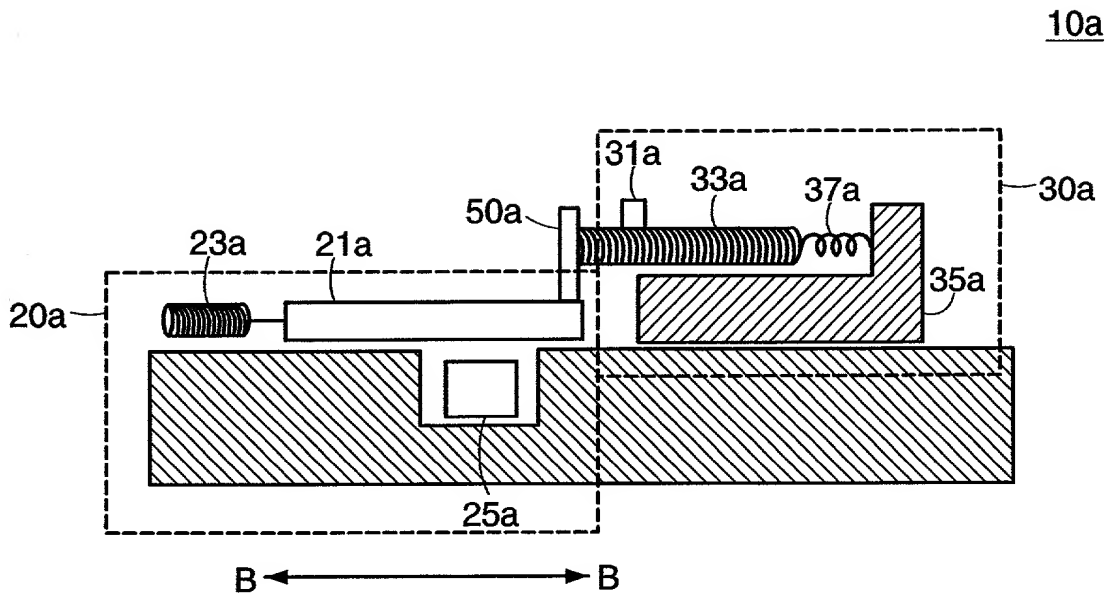


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**FIG. 1**  
PRIOR ART



**FIG. 2**  
PRIOR ART



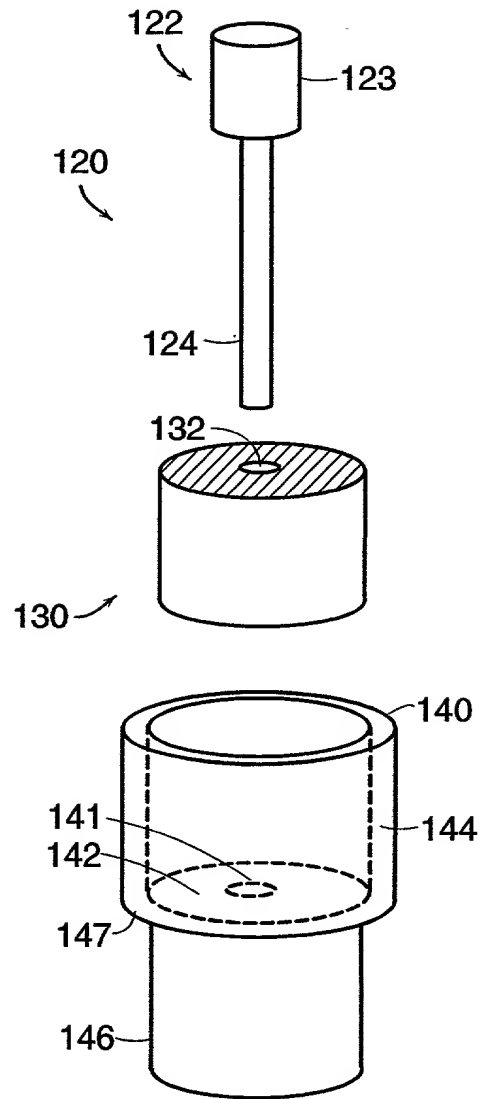
100

FIG. 5

500070-571155600

5/16

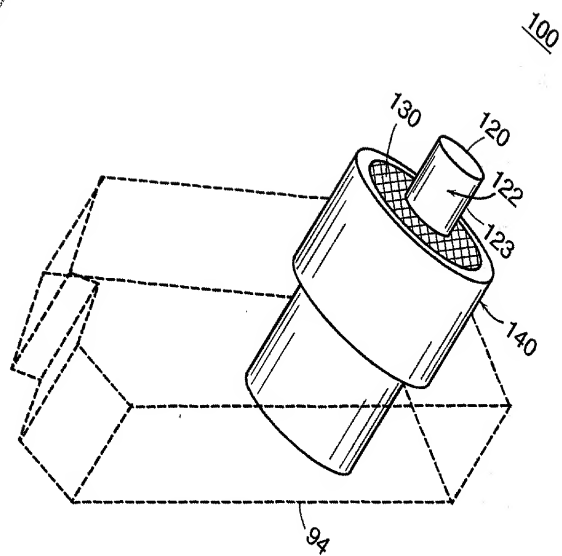


FIG. 6

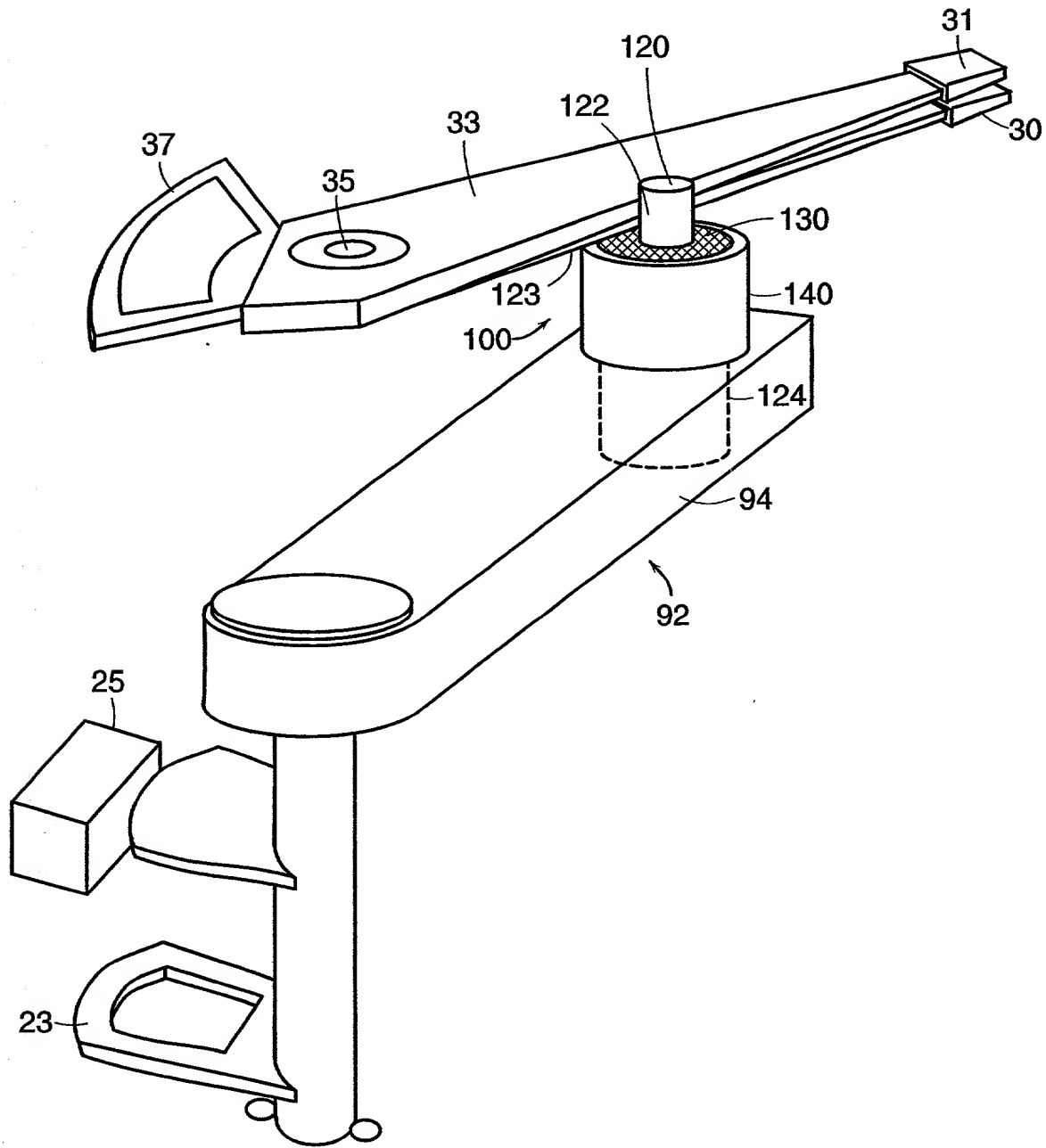


FIG. 6A



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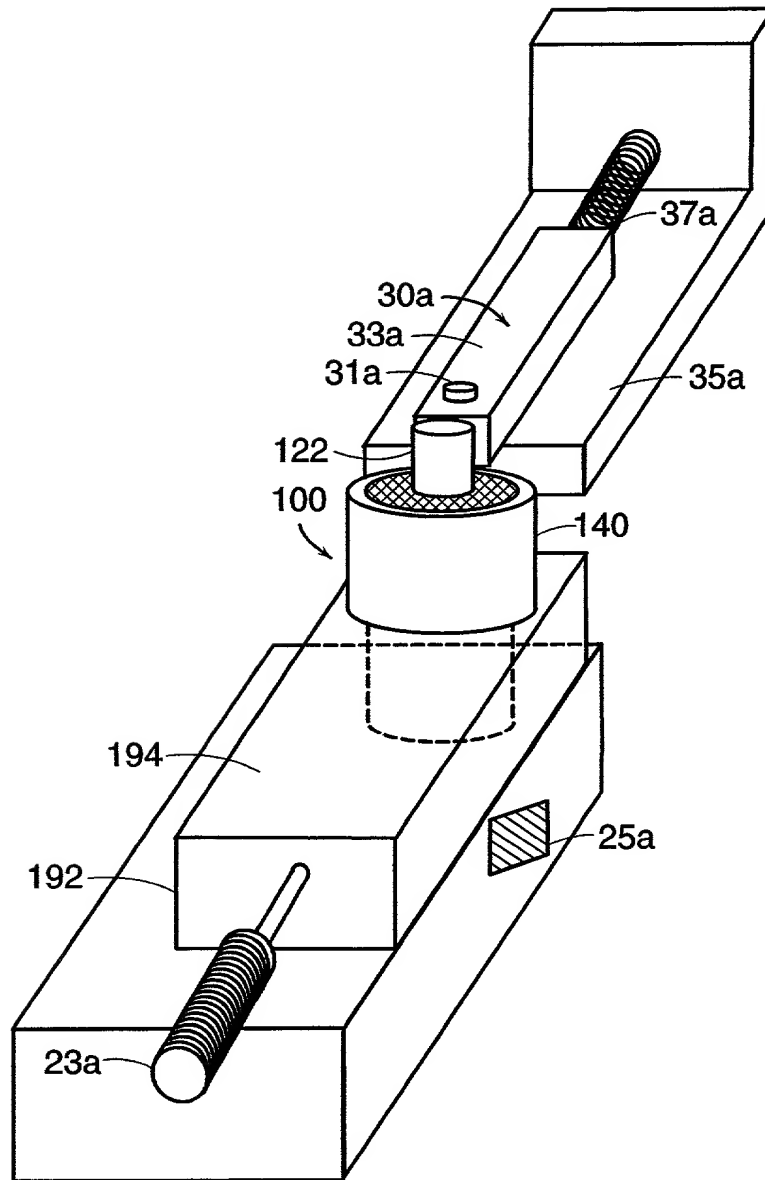


FIG. 6B

100

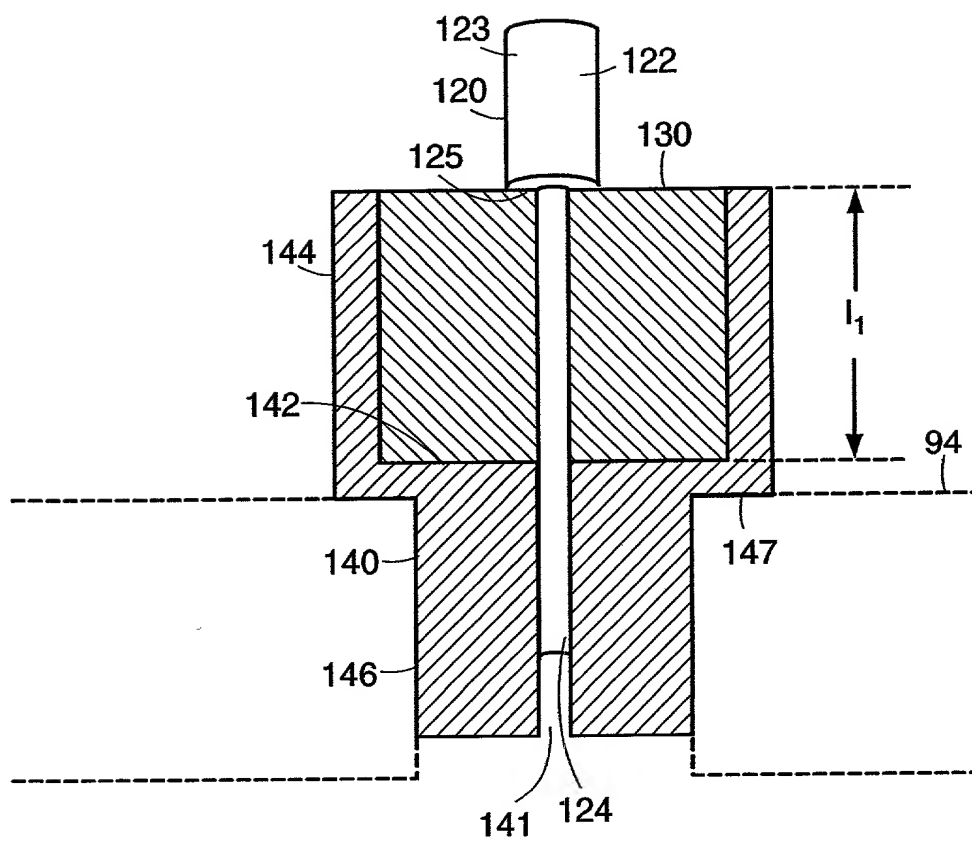


FIG. 7



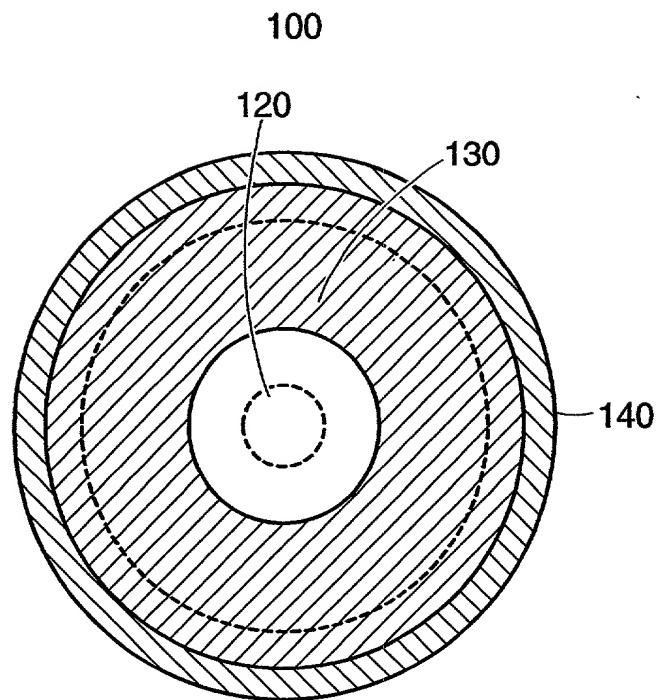


FIG. 8

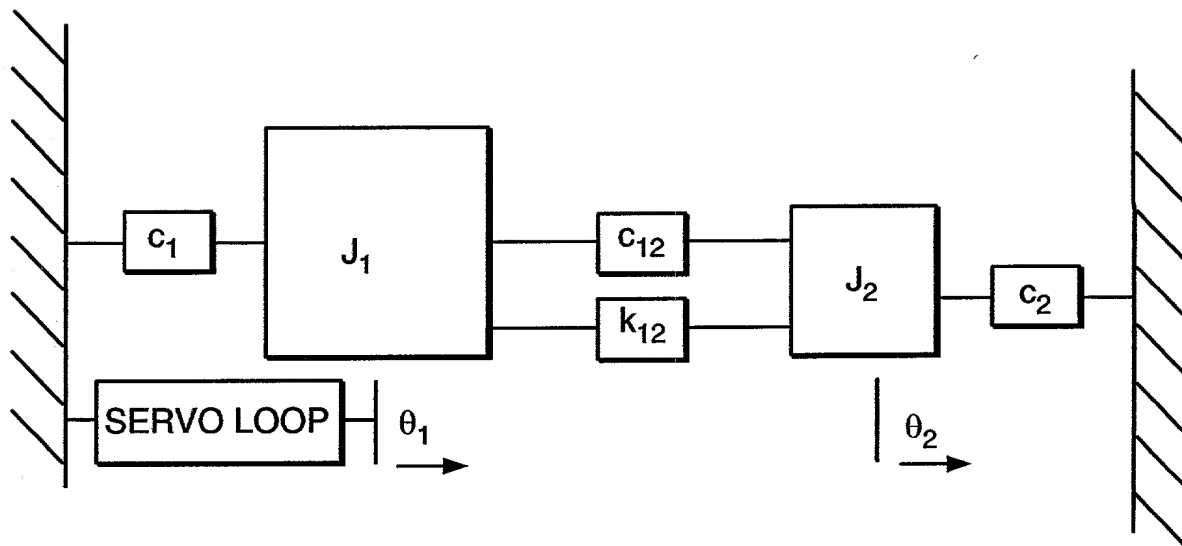
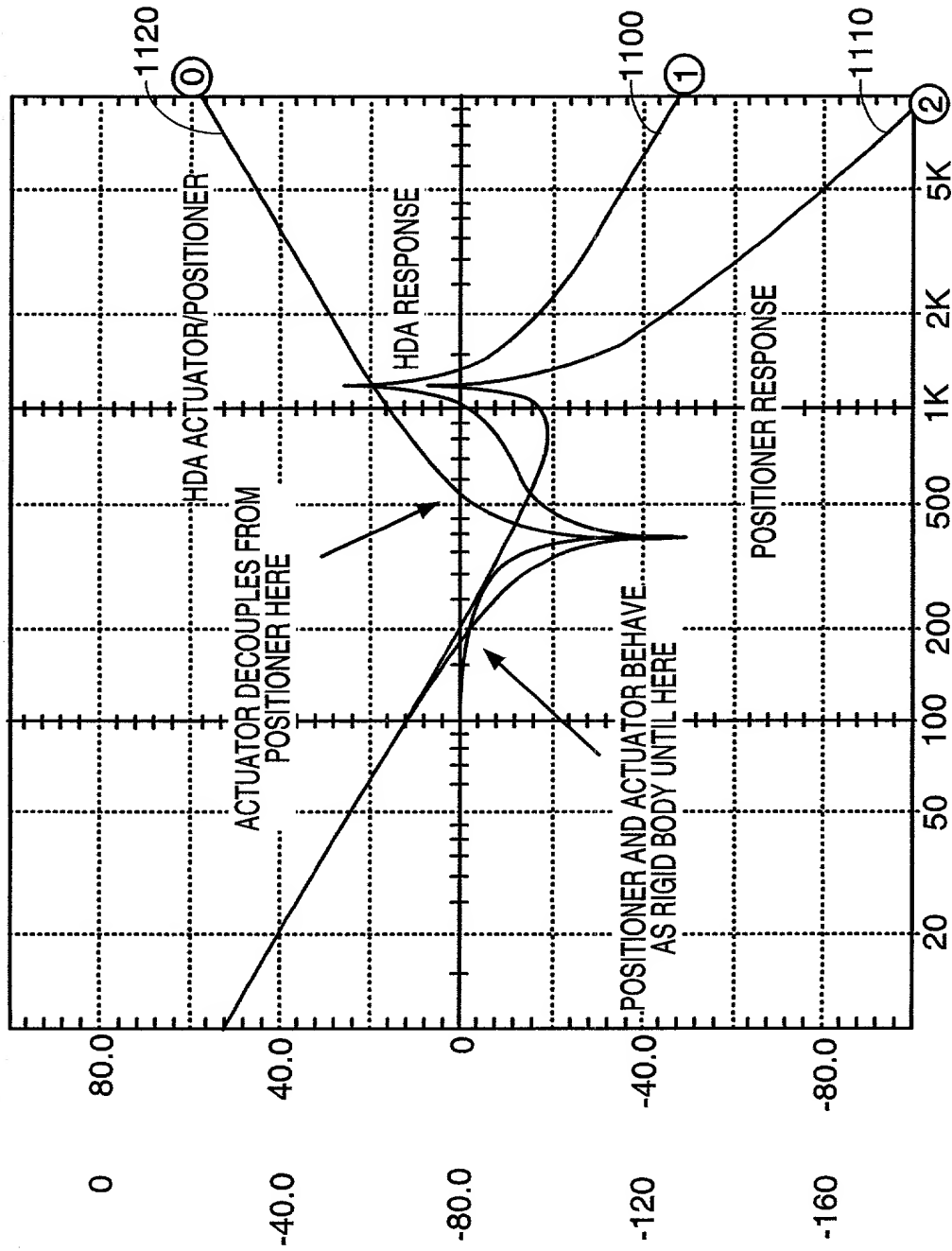


FIG. 9

200703145960



BODE RESPONSE WITH TORQUE DISTURBANCE AT HDA ACTUATOR

FIG. 10

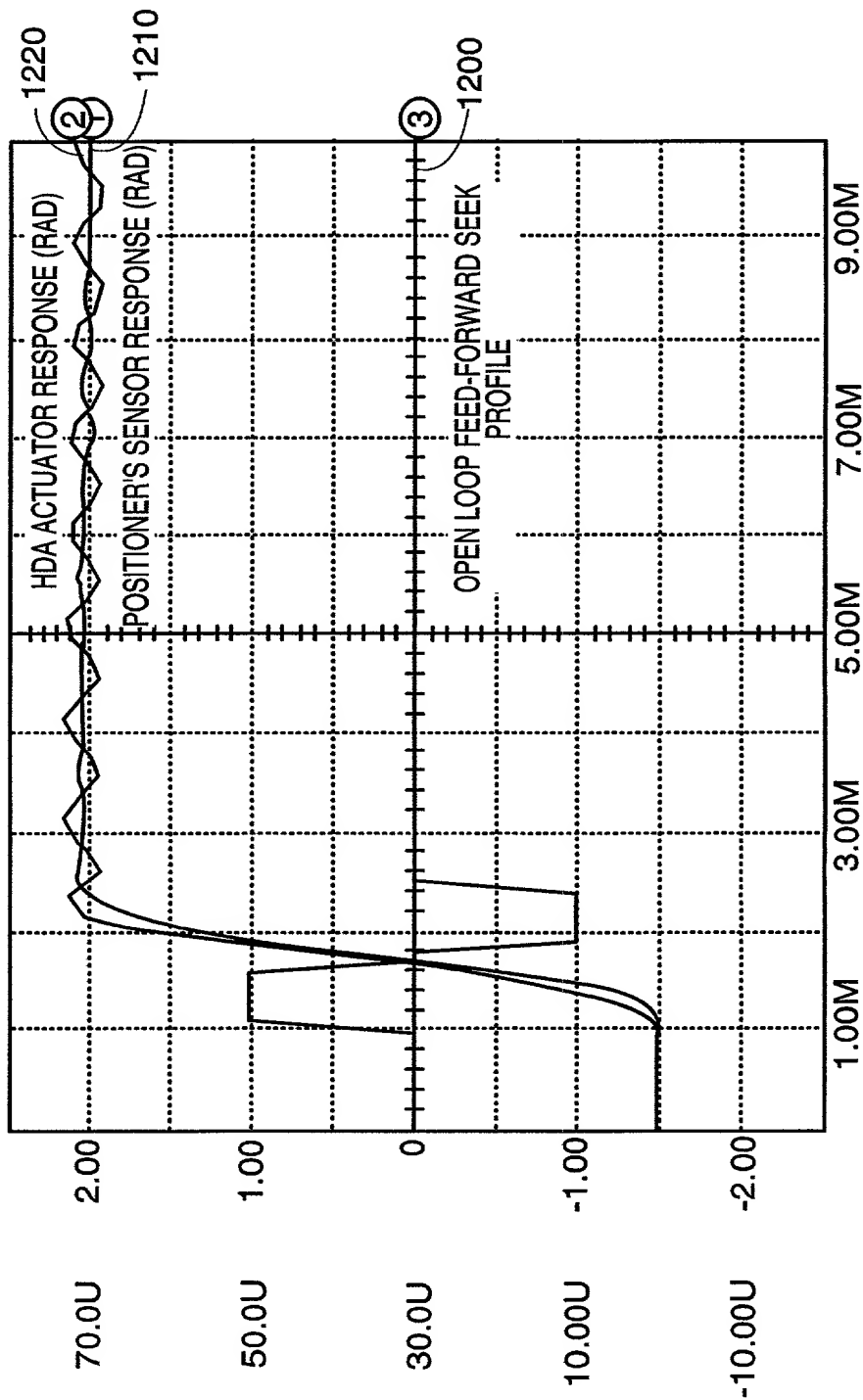
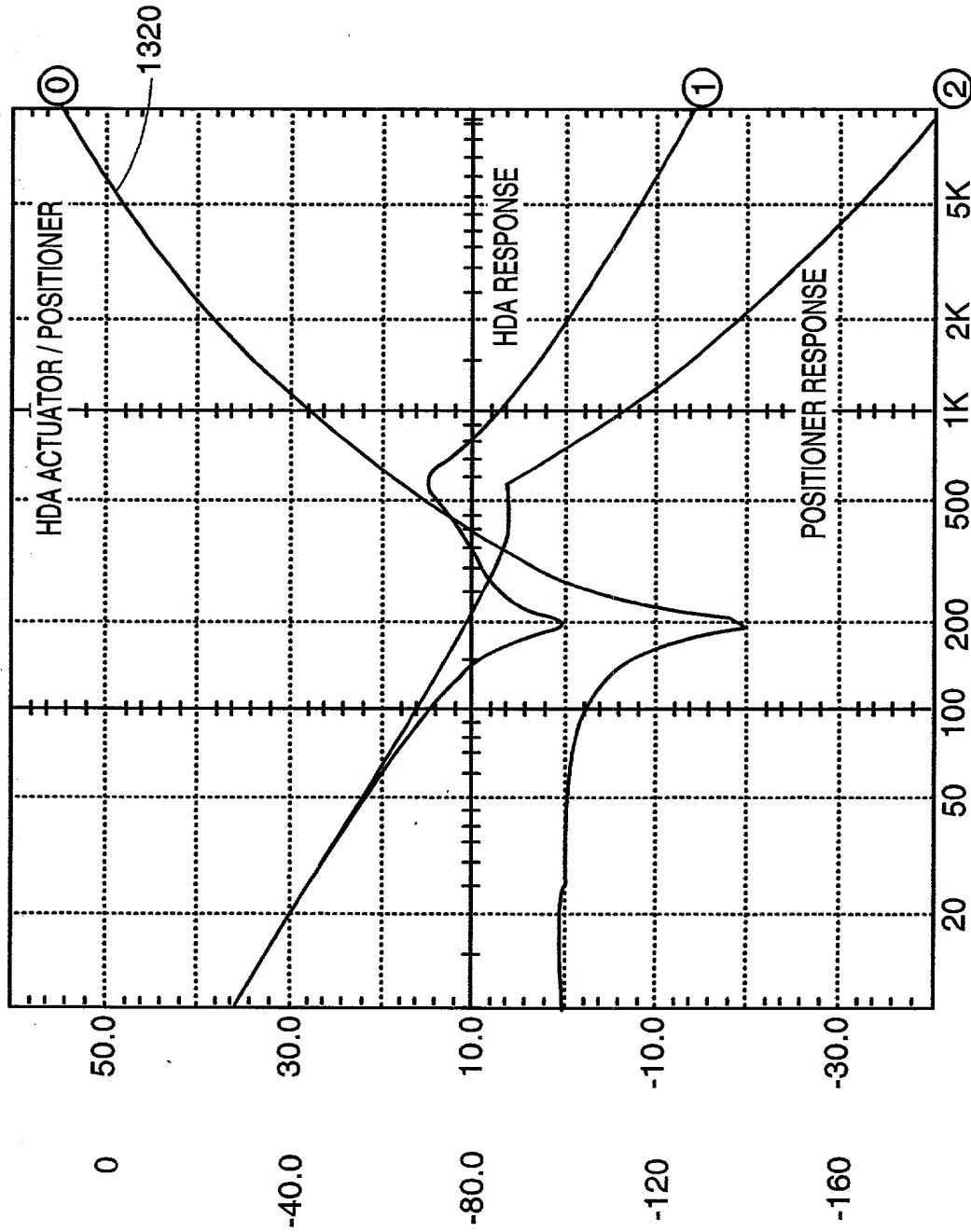
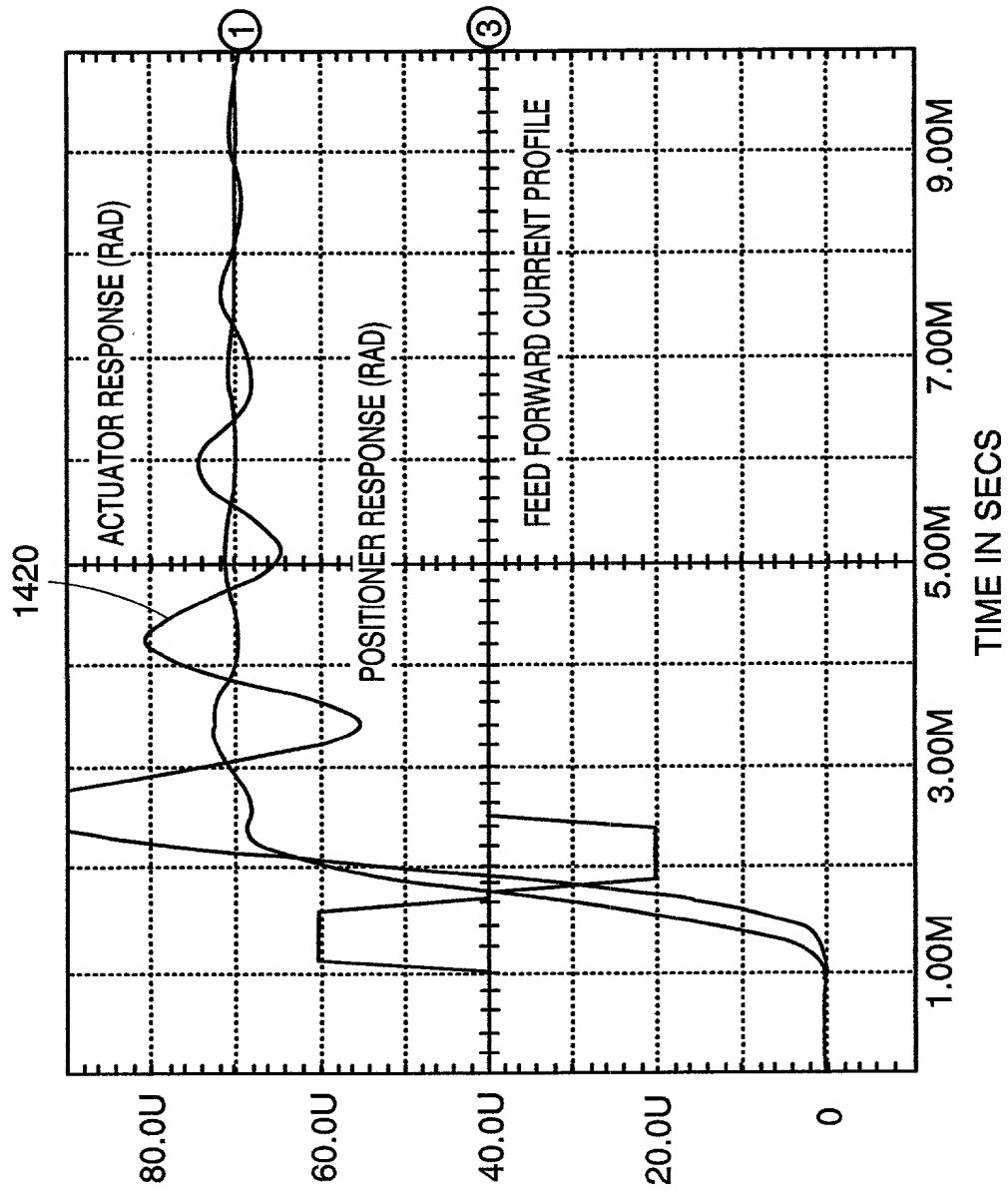


FIG. 11  
 TIME IN SECS (M=MILLISECONDS)  
 POSITIONER AND HDA RESPONSE WITH BANG-BANG  
 SEEK PROFILE WITH STIFF PIN



RESPONSE DUE TO TORQUE DISTURBANCE AT HDA ACTUATOR  
WITH SOFT MATERIAL BETWEEN HDA AND POSITIONER

FIG. 12



ACTUATOR AND POSITIONER RESPONSE FOR STANDARD  
BANG-BANG SEEK WITH SOFT MATERIAL

FIG. 13

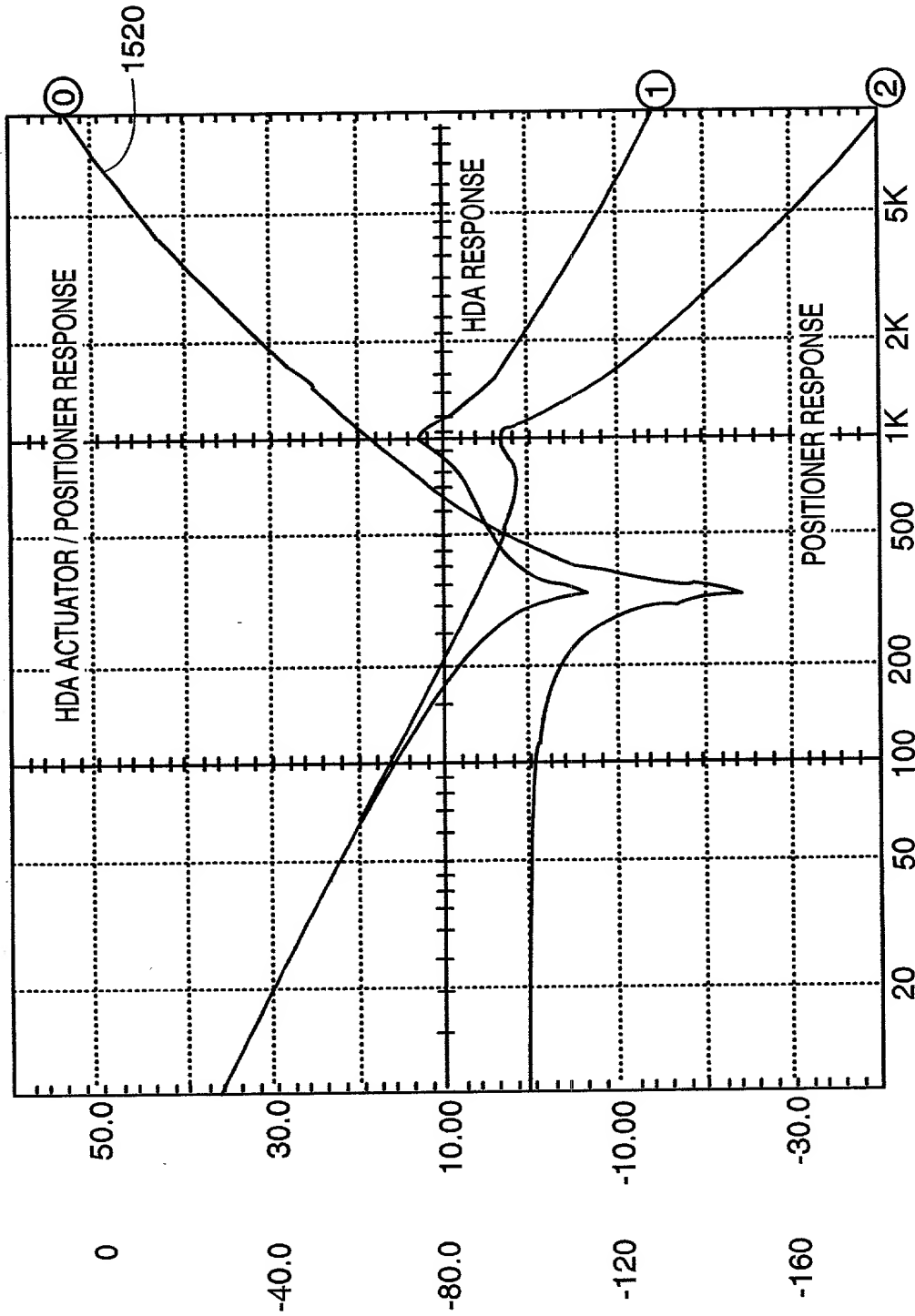


FIG. 14

RESPONSE FOR TORQUE DISTURBANCE AT ACTUATOR WITH ENG PIN

20000 5TH9000

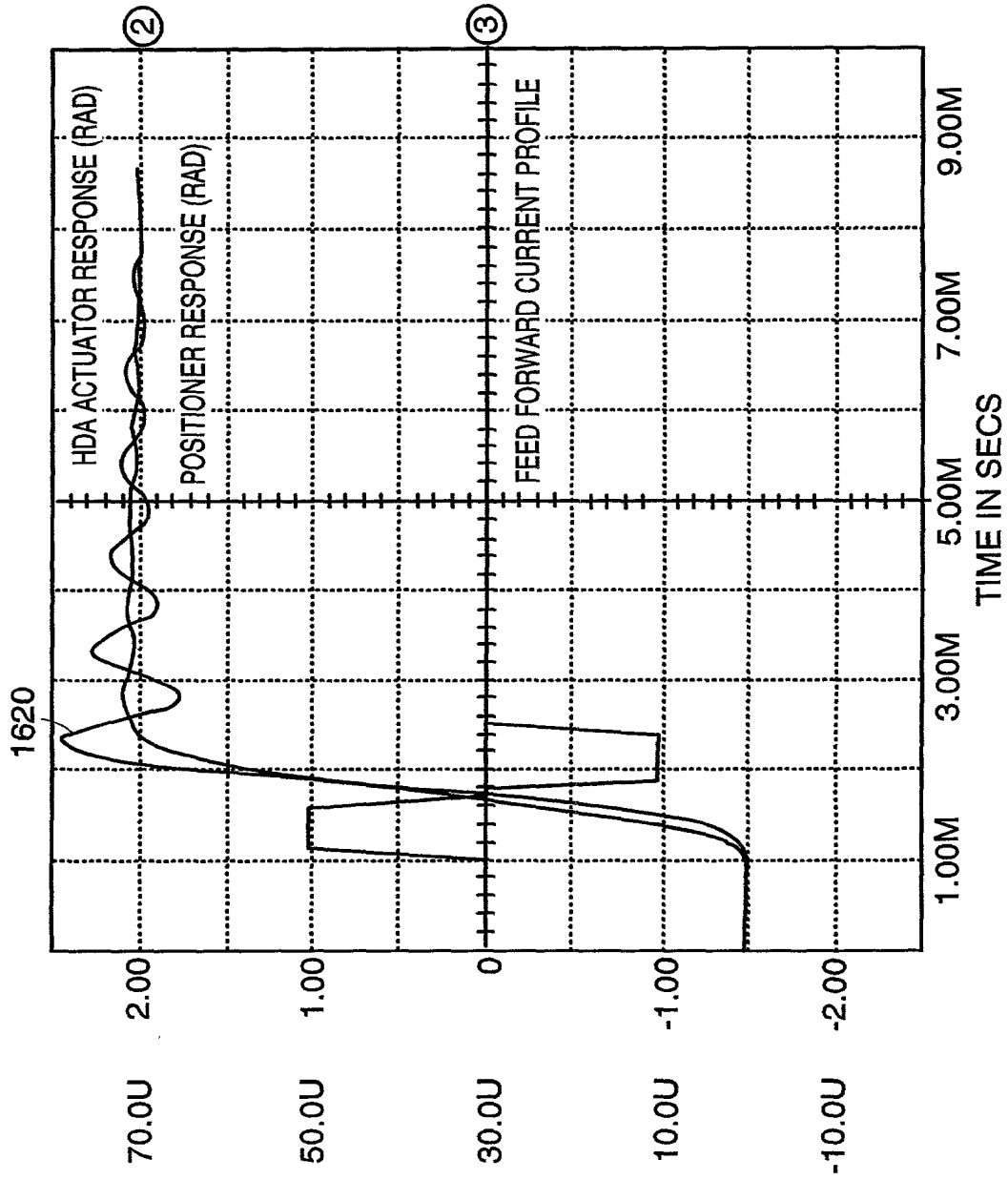


FIG. 15

POSITIONER AND ACTUATOR RESPONSE WITH ENGINEERED PIN

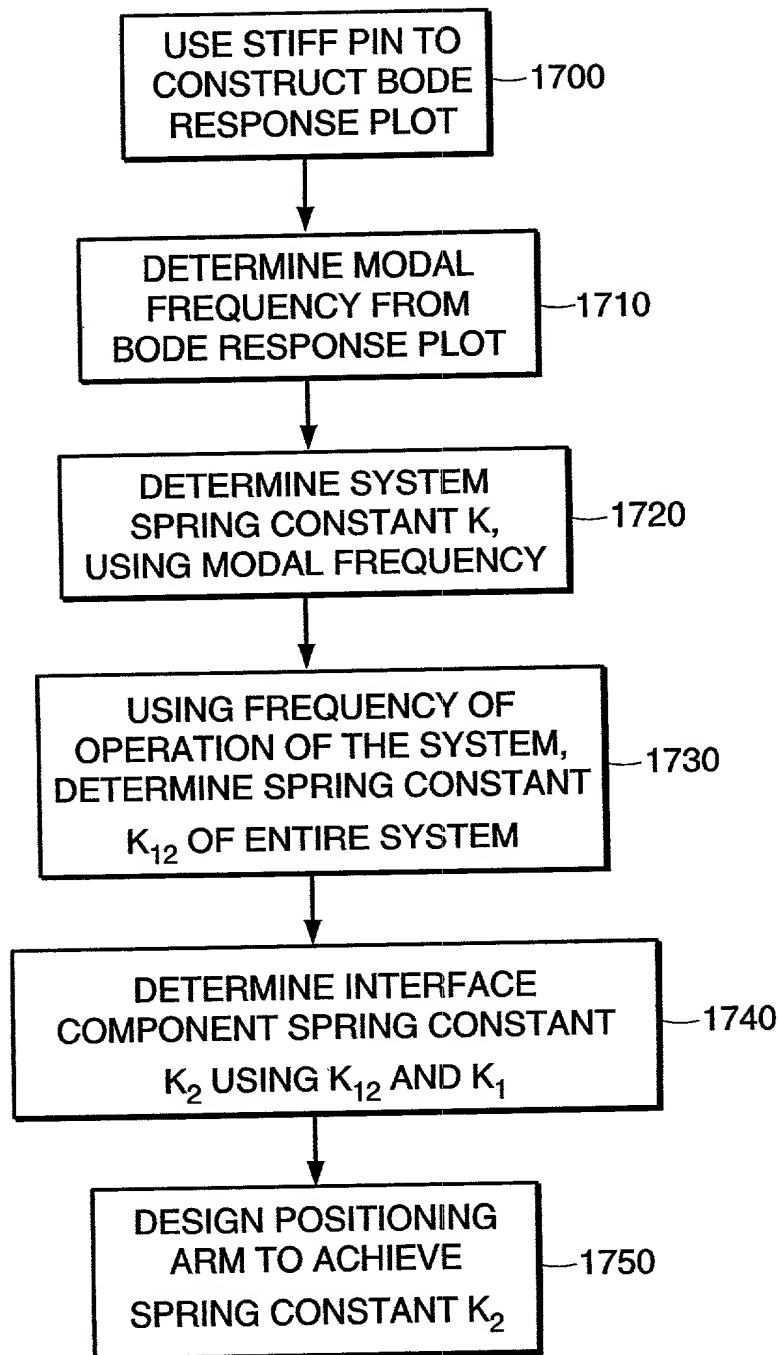


FIG. 16